



Complex Exposures in Breast Cancer: Unraveling the Role of Environmental Mixtures Virtual Workshop

Presenter Biographies

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Jonathan Boss

Jonathan Boss is a Ph.D. candidate in the Department of Biostatistics at the University of Michigan. His methodological work focuses on mediation models and the analysis of chemical mixtures, with application to a variety of problems in environmental health. He has several collaborations with researchers at the University of Michigan School of Public Health, the Pranger Amyotrophic Lateral Sclerosis Clinic, and the Telomere Research Network.

Che-Jung (Rong) Chang

Che-Jung (Rong) Chang, Ph.D., is an environmental epidemiologist focusing on broad issues around the chemical exposure on women health and health disparity. Her recent research has focused on the effects of environmental chemical and endocrine disrupting compound mixtures on hormone-sensitive cancers, including breast cancer. She earned her Ph.D. in environmental health science at Emory University and is currently a postdoctoral research fellow in the Environment and Cancer Epidemiology Group at NIEHS.

Sofie Christiansen

Sofie Christiansen, Ph.D., senior scientist, DTU Food, has more than 20 years of research experience with developmental toxicity studies in animals and advisory tasks to the Danish authorities with special expertise on reproductive toxicity, endocrine disrupters, and combination effects. Christiansen is an author or co-author of more than 50 scientific publications on how endocrine disrupting chemicals and reproductive toxicants (alone and as mixtures) in food and the environment can affect reproductive health. She is a national coordinator of OECD Test Guidelines and EU test methods in Denmark and is now “lead” on the OECD project on “The development of a Detailed review paper on methods and feasibility assessment for inclusion of mammary gland whole mount collection and evaluations”. Her current research is focused on endocrine disruption, developing AOP and new test methods, as she is an active part in the two European Horizon 2020 projects: ATHENA and FREIA.

Vince Cogliano

Vince Cogliano, Ph.D., is the deputy director for scientific programs at the California Office of Environmental Health Hazard Assessment. Previously at the U.S. Environmental Protection Agency, Cogliano directed its Integrated Risk Information System program and served as deputy to the agency’s scientific integrity official. Cogliano also was head of the *IARC Monographs* program at the International Agency for Research on Cancer (part of the World Health Organization) in Lyon, France. Cogliano

received his Ph.D. from Cornell University. His professional interests include qualitative and quantitative health risk assessment and its application to the protection of public health.

Justin Colacino

Justin Colacino, Ph.D., is an associate professor of environmental health sciences at the University of Michigan. His research focuses on understanding environmental and dietary factors in the development of chronic diseases like breast cancer. To accomplish this, his research group combines wet lab bench work and bioinformatic and statistical analysis of large scale genomic and epidemiologic data sets to translate findings from *in vitro* models to the population level.

Suzanne Fenton

Suzanne “Sue” Fenton, Ph.D., is a senior scientist specializing in Reproductive Endocrinology in the Division of the National Toxicology Program at NIEHS. Her laboratory has expertise in discovery of chemicals or environmental factors contributing to mammary gland developmental defects or cancer, pregnancy-related disease, and persistent adverse health effects in developmentally exposed offspring. She has received several NIH and EPA-based awards for her research on perfluorinated chemicals, endocrine disruptors, and mentoring.

Scarlett Lin Gomez

Scarlett Lin Gomez, Ph.D., M.P.H., is professor and Vice Chair for Faculty Development in the Department of Epidemiology and Biostatistics and a member of the Helen Diller Family Comprehensive Cancer Center, at the University of California, San Francisco, where she is co-leader of the Cancer Control Program. She is director of the Greater Bay Area Cancer Registry, a participant in the NCI SEER (Surveillance, Epidemiology, End Results) program and the California Cancer Registry. Her research focuses primarily on cancer health disparities /inequities and aims to understand the multilevel drivers, including structural and social determinants of health, of those disparities and inequities.

Jennifer Ish

Jennifer Ish, Ph.D., is a postdoctoral fellow in the Environment and Cancer group at the Epidemiology Branch of the National Institute of Environmental Health Sciences. She received her M.S. and Ph.D. in epidemiology from the University of Texas Health Science Center at Houston (UTHealth) School of Public Health in San Antonio. Her research interests include investigating the interplay and cumulative impact of social, psychosocial, and environmental stressors in relation to breast cancer and other women’s health outcomes to help address environmental health disparities.

Rena Jones

Rena Jones, Ph.D., M.S., is an investigator in the Occupational and Environmental Epidemiology Branch, Division of Cancer Epidemiology and Genetics at the National Cancer Institute, where her

interdisciplinary research program seeks to evaluate the role of environmental exposures in cancer etiology. Jones' work relies on the application of Geographic Information Systems and novel exposure assessment methods. She focuses on improving long-term environmental exposure estimates by optimizing the spatial accuracy of residential addresses and exposure source locations, characterizing participant mobility and time spent in microenvironments, incorporating information from surveys, and leveraging linkages to environmental monitoring data and other secondary datasets. Jones co-leads the NCI DCEG Geographic Analysis Working Group and the New Technologies Working Group.

Mhel Kavanaugh-Lynch

Mhel Kavanaugh-Lynch, M.D., M.P.H., has been director of the California Breast Cancer Research Program since July 1995. She brings to the program a combination of wide-ranging experience in oncology, cancer research, public health, and community-partnered participatory research as well as extensive personal involvement in health advocacy and community activism.

Alexander Keil

Alexander Keil, Ph.D., is a Stadtman Investigator in the Occupational and Environmental Epidemiology Branch in the Division of Cancer Epidemiology and Genetics of the National Cancer Institute. He received his Ph.D. in epidemiology from the University of North Carolina at Chapel Hill. His research focuses on the integration of epidemiologic mixtures data and environmental decision making, as well as addressing bias in longitudinal epidemiologic studies.

Marianthi Kioumourtzoglou

Marianthi-Anna Kioumourtzoglou, Sc.D., M.P.H., is an associate professor at the Department of Environmental Health Sciences at Columbia University's Mailman School of Public Health. Her research focuses on characterizing associations between air pollution and other climate-relevant exposures and adverse health outcomes. She is also very interested in the development and application of robust methods to analyze exposures to environmental mixtures in health studies.

Lauren Koval

Lauren Koval is a third-year Ph.D. student in the Department of Environmental Sciences and Engineering at UNC Chapel Hill. Her research centers on evaluating health effects resulting from environmental exposures. In particular, she focuses on the influence of chemical mixtures in household environments on breast cancer risk using high-throughput informatic approaches.

Lizbeth López-Carrillo

Lizbeth López-Carrillo, Ph.D., is an emeritus researcher from the Mexico National Institute of Public Health. She is a chemist-epidemiologist, holding a doctoral degree from Yale University. She has

designed and conducted several population-based epidemiologic studies mainly focused on the evaluation of dietary habits, exposure to environmental pollutants and their role in breast and gastric cancers. She works to strength regional collaborative research, find opportunities for capacity building and foster decision making to prevent common environmental preventable cancer determinants.

Matthew Lockett

Matthew Lockett, Ph.D., is an associate professor in the Chemistry Department at the University of North Carolina at Chapel Hill. His laboratory develops 3D tissue-like architectures, focusing on healthy human breast and liver models and breast and colorectal tumor models. These 3D cultures are used to probe how hypoxia and other microenvironments stresses affect cellular responses to drugs and toxins.

Ángel Mérida-Ortega

Ángel Mérida-Ortega is an epidemiologist recently graduated from the Mexico National Institute of Public Health, where he currently collaborates in the research team led by Lizbeth López-Carrillo. He has investigated dietary and environmental factors of breast cancer for more than 8 years and recently completed a Fulbright-funded research stay at Mount Sinai, New York, focused on evaluating mixtures of pollutants.

Sung Kyun Park

Sung Kyun Park, Sc.D., M.P.H., is an associate professor of epidemiology and environmental health sciences at the University of Michigan School of Public Health and a co-director of the Integrated Health Science Core of the NIEHS-funded Michigan Lifestage Environmental Exposures and Disease Center. He received his M.P.H. in environmental health from Seoul National University and a doctoral degree in environmental epidemiology from the Harvard School of Public Health. Park's research interests include the role of environmental exposures in cardiometabolic and reproductive health with a focus on environmental exposure assessment, epidemiologic causal inference, and the development of analytic approaches to assess chemical mixtures. He is the principal investigator of the Study of Women's Health Across the Nation Multi-Pollutant Study where health effects of various sets of chemicals and their mixtures in midlife women are tested.

Julia Rager

Julia Rager, Ph.D., is an assistant professor at the University of North Carolina at Chapel Hill, where she leads research evaluating environmental exposures and their impact on public health. Her current research interests surround the evaluation of chemical mixtures that occur in the environment and their associated toxicity and health risks. Rager's unique approach to mixtures evaluations couples *in silico* modeling with exposure science and molecular toxicology methods to improve chemical-disease linkages and more efficiently screen for understudied chemicals that commonly co-occur in the

environment. Rager is also leading initiatives to train the next generation of environmental health researchers on current data science practices and computational methods.

Cynthia Rider

Cynthia Rider, Ph.D., DABT, is a toxicologist with the National Toxicology Program (NTP), National Institute of Environmental Health Sciences (NIEHS). She serves as project leader for a diverse portfolio of testing programs including polycyclic aromatic compounds, botanical dietary supplements, and industrial chemicals. Rider's research interests are in evaluating and refining methods to predict mixture toxicity based on data from components or whole reference mixtures.

Ruthann Rudel

Ruthann Rudel, M.S., is the director of research at Silent Spring Institute, where she leads exposure and toxicology research programs focusing on hormonally active chemicals and biological mechanisms by which chemicals may influence breast cancer. Her innovations in "breast cancer toxicology" include reviews of methodological issues in toxicity and risk assessment for endocrine disruptors and carcinogens; and analyses of chemicals that cause mammary tumors, alter mammary gland development, or activate biological pathways in breast cancer. She has published reviews of biomonitoring methods for breast cancer-related chemicals and evaluated the consistency of breast cancer epidemiological studies with mechanistic findings from experimental studies. Her research in exposure science was the first to measure large numbers of endocrine disruptors in U.S. homes, and established consumer products as a major source of exposure. She served on EPA's Scientific Advisory Committee on Chemicals, the National Academy of Sciences panel Unraveling Low Dose Toxicity, and the U.S. National Toxicology Program Board of Scientific Counselors. Silent Spring Institute is dedicated to scientific research on the environment and women's health with a goal of breast cancer prevention.

Dale Sandler

Dale Sandler, Ph.D., is a senior investigator and chief of the Epidemiology Branch in the Intramural Research Program of the National Institute of Environmental Health Sciences at NIH where she leads the Chronic Disease Epidemiology Group. She received her BA from Boston University, MPH from Yale University, and her Ph.D. in epidemiology from Johns Hopkins University. She is principal investigator of the *Sister Study*, a US-wide cohort of over 50,000 women who have a sister who was diagnosed with breast cancer. Her research in the Sister Study covers a range of factors related to breast cancer and other chronic disease risk, including early life exposures, social, environmental and lifestyle factors, and through collaborations at NIEHS and elsewhere, genetic and epigenetic factors. She also is co-principal investigator of the *Agricultural Health Study*, leading efforts to study the impact of agricultural exposures on risk for non-cancer chronic diseases in a cohort of licensed pesticide applicators who have been followed since 1997 and principal investigator of the *Gulf Long-term Follow-up Study*, a prospective study of potential health effects in individuals involved in cleanup of the oil spill following the 2010 *Deepwater Horizon* disaster in the Gulf of Mexico.

Heather Stapleton

Heather Stapleton, Ph.D., M.S., is a professor, an environmental chemist, and exposure scientist in the Nicholas School of the Environment at Duke University. Her research interests focus on identification of halogenated and organophosphate chemicals in building materials, furnishings and consumer products, and estimation of human exposure, particularly in vulnerable populations such as pregnant women and children. Her laboratory specializes in analysis of environmental and biological tissues for organic contaminants to support environmental health research.

Melissa Troester

Melissa Troester, Ph.D., has scientific expertise in biomarker development and validation, genomic methods, and epidemiology of breast cancer and breast cancer disparities. Her transdisciplinary training includes basic research in molecular biology, observational pathology in large studies, and epidemiologic research methods. She is the principal investigator on the Carolina Breast Cancer Study, a study of breast cancer epidemiology and tumor biology focused on understanding the interactions of cancer biology and access to care in breast cancer disparities. Troester is the founder and principal investigator of the Normal Breast Study, a unique biospecimen resource of normal tissue from women undergoing breast surgery at UNC Hospitals. Troester has extensive experience working in consortia, including the African American Breast Cancer Epidemiology and Risk consortium of breast cancer disparities, Breast Cancer Association Consortium, and the Cancer Genome Atlas (TCGA) project. In the TCGA, Troester led coordination of histology, copy number, mutation, methylation, mRNA and microRNA expression data for the Normal Breast committee. She has experience integrating genomic data and molecular biology with human studies of breast cancer etiology and progression and has published more than 150 papers focused on breast cancer, breast microenvironment and stromal-epithelial interactions.

Doug Walker

Douglas Walker, Ph.D., is an associate professor in the Gangarosa Department of Environmental Health at Emory University. His research focuses on the continued development and application of advanced analytical strategies for measuring the exposome and characterizing mechanisms underlying environment-related diseases in humans. Walker leads the Comprehensive Laboratory for Untargeted Exposome Science at Emory University, which was established to provide high-quality, untargeted screening of biological samples for nutrition, precision medicine and environmental health research.

Alexandra White

Alexandra J. White, Ph.D., M.P.H., is a Stadtman Investigator in the Epidemiology Branch at the National Institute of Environmental Health Sciences where she leads the Environment and Cancer Epidemiology Group. Her research is focused on improving our understanding of how environmental exposures are related to women's risk of developing cancer. She is particularly interested in considering how environmental exposures may act synergistically to influence cancer risk. White has studied how breast

cancer risk is influenced by ambient exposures such as air pollution, ultraviolet light and light at night, as well as sources of chemicals such as personal use of hair products.

Tracey Woodruff

Tracey Woodruff, Ph.D., M.P.H., is the Alison S. Carlson Endowed Professor in the Department of Obstetrics, Gynecology, and Reproductive Sciences at UCSF and the director of the program on Reproductive Health and the Environment. She is a recognized expert on environmental pollution exposures and impacts on health, with a focus on pregnancy, infancy, and childhood, and her innovations in translating and communicating scientific findings for clinical and policy audiences. She was previously a senior scientist and policy advisor for the U.S. EPA's Office of Policy.

Anna Young

Anna Young, Ph.D., is a research associate in the Department of Environmental Health and associate director of the Healthy Buildings program at the Harvard T.H. Chan School of Public Health. Her research focuses on our indoor exposures to complex mixtures of hormone-disrupting chemicals and builds evidence for healthier materials as a strategy to reduce these chemical exposures. She earned her Ph.D. and M.S. in environmental health from the Harvard Chan School, and she also holds a B.A. in computer science and environmental studies from Yale University.